

ABSTRACT

The invention relates to a method of coding and of decoding a digital data stream coded by spatio-temporal combinations, in multiple transmission and reception.

On transmission, the initial stream (IDS) is subjected to an outer coding (A), a blockwise interleaving (B), a demultiplexing (C) over a plurality of pathways, to an inner coding Ξ_m on each pathway, then transmitted on a plurality (v) of distinct antennas forming a space-diversity array. On reception, the coded symbol streams transmitted are observed (F) by means of a number v of reception antennas which is independent of the number of transmission antennas, the observed coded symbol streams $\{\text{MSDS}_r\}_{r=1}^{r=p}$ are subjected to a process of turbo-detection by equalization and joint decoding (G), deinterleaving (H), outer decoding (I), interleaving (J), so as to generate an a priori information item (api) on the coded bits, which is reinjected (K) into the turbo-detection process.

Application to the implementation of a universal radiofrequency interface, in particular for mobile radio telephony.

Fig. 1a and 2a.

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